

Supereta™ Series DC/DC Power Modules 48V Input, 33 - 60A Output Quarter Brick



The Supereta™ Series offers an **industry standard quarter brick** high current power module with true useable output power. Its **80.5% to 91% efficiency** and superior thermal performance make the Supereta™ Series of power modules ideally suited for tight space and power-hungry applications in demanding thermal environments. This rugged building block is designed to serve as the core of your high reliability system. A wide output voltage **trim range, -20 to +10%**, and remote sensing are standard features enhancing versatility.

Features

- **Standard Quarter Brick Footprint**
- **Up to 60A of output current**
- **Power density – 100W / in³**
- **Efficiency – up to 92%**
- **Full load efficiency – 80.5% to 91%**
- **Output power – up to 165W in high ambient temperature, low airflow environments with minimal derating**
- **Wide output voltage trim range**
- **Basic insulation – 1500Vdc**
- Choice of remote on/off configuration
- Industry standard output voltage trim
- Remote sense
- Constant switching frequency
- Latched output over-voltage protection
- Auto-recovery full protections:
 - Input under and over voltage
 - Output over-current
 - Output short circuit
 - Thermal limit
- UL 60950 (US and Canada), VDE 0805, CB scheme (IEC950) Safety markings and CE Mark (EN60950)
- Optional 0.110", 0.180", 0.200" pin length
- Optional non-latching OVP protection
- EMI: CISPR 22 A or B with external filter
- Multiple patents
- ISO9000 certified manufacturing facilities

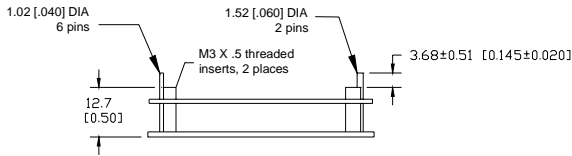
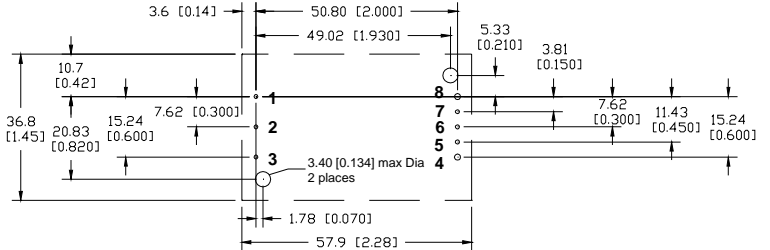
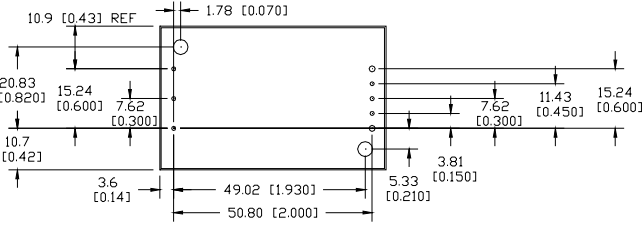
TDK Innoveta Base Product Code	Input Voltage	Output Voltage	Output Current	Efficiency 75% Load	Efficiency 100%Load
iQM48035A033V	36-75V	3.3V	35A	92.0%	91.5%
iQM48050A033V	36-75V	3.3V	50A	91.5%	90.5%
iQM48040A025V	36-75V	2.5V	40A	90.0%	89.5%
iQM48050A025V	36-75V	2.5V	50A	89.5%	88.5%
iQM48060A025V	36-75V	2.5V	60A	89.0%	87.5%
iQM48060A018V	36-75V	1.8V	60A	87.0%	85.0%
iQM48060A015V	36-75V	1.5V	60A	85.5%	83.5%
iQM48060A012V	36-75V	1.2V	60A	83.0%	80.5%

Typical Performance

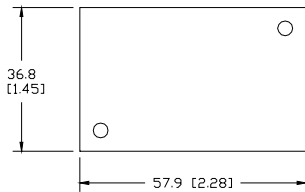
Input Characteristics		
Operating input range	36-75V	
Transient input voltage	100V	100mS max
Turn-on voltage	34.7V	
Turn-off voltage	32.3V	
Start-up time	28 mS	On/Off to 90% Vout
Maximum input current	5.7A	Input 0-75V, I _{o,max}
Output Characteristics		
Output voltage tolerance	+/- 3% max	Over line, load, and temp to end of life
Efficiency	see product table	I _{o,max}
Line regulation	1 mV	Over rated input
Load regulation	1 mV	Over rated load
Output voltage adjustment	80%-110%	%V _{o,nom}
Output ripple	55 mVp-p	20MHz bandwidth
Dynamic response		Load step 25% of I _{o,max}
Transient voltage	100 mV	
Recovery time	450 μS	slew rate =0.1A/us
Ripple frequency	260kHz - 320 kHz	Fixed
Protection		
Output over-current	115% of I _{o,rated}	Auto-recovery hiccup
Short circuit	Continuous protection	Auto-recovery hiccup
Output over-voltage	125% of V _{out,nom}	Latching
Thermal shutdown	126C	Auto recovery
Environmental		
Operating temperature	-40C to 117C	See full datasheet

Advance Product Brief: Supereta™ Series – Single Output High Current Quarter Brick

Dimensions are in mm [in]. Unless otherwise specified tolerances are: $x.x \pm 0.5$ [0.02], $x.xx \pm 0.25$ [0.010].



Recommended hole pattern (top view)



PIN	FUNCTION	PIN	FUNCTION
1	Vin (+)	4	Vo (-)
2	On/Off	5	Sense (-)
3	Vin (-)	6	Trim
		7	Sense (+)
		8	Vout (+)

Ordering Information

Product Identifier	Package Size	Platform	Input Voltage	Output Current/Power	Output Units	Main Output Voltage	# of Outputs	Safety Class	Feature Set
i	Q	M	48	060	A	018	V	- 0	00
TDK Innoveta	Quarter-Brick	Supereta	36-75V	033 – 33A 050 – 50A 060 – 60A	Amps	050 – 5.0V 033 – 3.3V 025 – 2.5V 018 – 1.8V 015 – 1.5V 012 – 1.2V	Single		00 – Standard

Feature Set	On/Off Logic	OVP	Pin Length
00	Positive	Latch	0.145"
01	Negative	Latch	0.145"
02	Positive	Latch	0.110"
03	Negative	Latch	0.110"
04	Positive	Latch	0.200"
05	Negative	Latch	0.200"
06	Positive	Non-Latch	0.145"
07	Negative	Non-Latch	0.145"
08	Positive	Latch	0.180"
09	Negative	Latch	0.180"

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